FY-2001 PROPOSED SCOPE-OF-WORK for: **Project #:** CAP-20
Operation and Maintenance of the Highline Lake Fish Barrier

Lead Agency: Colorado Division of Parks and Outdoor Recreation

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Category:
_x_ Ongoing project
___ Ongoing-revised project
___ Requested new project
___ Unsolicited proposal

Expected Funding Source:
___ Annual funds
___ Capital funds
_x_ Other (Colorado contribution)

I. Title of Proposal:

Operation and Maintenance of the Highline Lake Fish Barrier

II. Relationship to RIPRAP:

Colorado River Action Plan: Mainstem
III.A. Reduce negative impacts to endangered fishes from sport fish management activities.

III. Study Background/Rationale:

Screening the outlet to Highline Lake, located near Fruita, Colorado, was recommended to reduce or eliminate continuous introduction of nonnative fishes into the Colorado River mainstem from this source. Accordingly, a net-type fish barrier, consisting of 1/4" nominal opening polyester mesh, was constructed in the spillway approach of Highline Lake. The net was installed as an experiment to evaluate the effectiveness of constructing and operating such fish barriers. To establish the effectiveness and potential acceptability of such fish barriers, the Highline Lake fish barrier must be evaluated for: 1) ability to prevent escapement of all life stages of target species to be contained in the reservoir, 2) ease of maintenance and routine cleaning, 3) ease of removal and re-installation for protection from ice damage, 4) potential to leave in place during ice cover on lake, and 5) longevity and annual operational costs.

Operation and maintenance of the Highline Lake Fish barrier includes initial net installation (completed), installation (completed) and maintenance of a protective buoy line, annual net cleaning and repair, and annual net removal and re-installation (if necessary). Operation and

maintenance costs for FY-2001 are described in this scope-of-work. The effectiveness of the Highline Lake fish barrier in preventing escapement of target fishes is being evaluated by the Colorado Division of Wildlife (CDOW; Pat Martinez) as part of a Federal Aid Project.

IV. Study Goals, Objectives, End Product:

Goal/Objective: Operate and maintain the Highline Lake fish barrier and contribute to the evaluation of the effectiveness and feasibility of this type of net barrier to reduce or eliminate nonnative fish escapement.

End Product: Operation and maintenance of the fish barrier for FY-2001 and beyond. Final Report on evaluation of the fish barrier (including results of the CDOW Federal Aid study) scheduled for December 2000.

V. Study Area: Highline Lake State Park, Loma, Colorado.

VI. Study Methods/Approach:

The State of Colorado, Division of Parks and Outdoor Recreation (DPOR) operates Highline Reservoir and proposes to operate the fish barrier for FY 2001.

Initial net installation: Completed.

Protective Buoy Line: The protective line has been installed and will require only periodic maintenance and repair.

The buoy line that was installed to protect the net is a solid buoy line with large floating signs that state - **Boats Keep Out** (in large letters) - and the line itself has floats along the entire length to protect the net from encroachment by errant boating traffic. The floats and floating signs have a demonstrated life of at least 5 years and will last at least as long as the net will. The cable is plastic covered, and buoy experience would indicate that it would last the minimum 5 year net life.

Net Cleaning and Repair Operations (in water):

Weekly visual survey - Visual survey of the net and buoy line will be conducted on regular weekly intervals to determine the condition of the net and take appropriate action to successfully contain any problems that arise. If the problem is near the surface, attempts will be made to repair with on-site personnel using repair supplies on-site. Should repair become necessary, the problem will be corrected as soon as possible.

Monthly survey underwater - Local divers will examine the net for debris, tears, or other maintenance needs. Small net tears will be repaired underwater with supplies on-site. The need for cleaning would be determined. Currently, cleaning has not become an operational necessity as the water exchange is continual without putting any strain on the net itself. The engineering firm stated that over 30% of the net would have to be blocked before any problem would occur. Cleaning options will continue to be evaluated. Since installation,

it has been determined that cleaning the top 6-8' of net is possible by using the barge and winch and cleaning the net with a pressure washer unit without getting in the water. The remaining net will be cleaned underwater using divers and a high pressure cleaning unit.

Annual Net Removal and Re-installation:

The need to annually remove and re-install the net is still being evaluated. After a successful experiment leaving the net in through the winter, plans are to continue to leave the net in year round.

VII. Task Description and Schedule:

Operate and maintain the fish barrier as described above.

VIII. FY-2001 Work:

Deliverables/Due Dates:

Operate and maintain the fish barrier as described above. Final Report on evaluation of the fish barrier (including results of the CDOW Federal Aid study) scheduled for December 2000.

Budget estimate:

Weekly visual survey	$1,200
Monthly underwater survey and cleaning	$7,500
Total	$8,700 **Funded by the state of Colorado**

FY-2002 and Beyond:

Procedures/costs for operating and maintaining the net barrier will be determined in the final report.

IX. Budget Summary:

FY-2001	$8,700 (Colorado contribution)
FY-2002 and beyond	To be determined.